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REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-27 and 29-32 are pending in this application. Claims 1, 27 and 30 are amended; and Claim 28 is canceled by the present amendment. Claims 1, 27 and 30 are amended only to correct minor matters of form. No new matter is presented.

In the outstanding Office Action, Claims 1-3, 5, 11-17 and 27-32 were rejected under 35 U.S.C. § 102(e) as anticipated by Jorgensen (U.S. Patent No. 6,720,984, herein "Jorgensen"), Claims 18-26 were rejected under 35 U.S.C. 103(a) as being unpatentable over Jorgensen, and Claims 4 and 6-10 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants appreciatively acknowledge the indication of allowable subject matter. However, since Applicants consider that independent Claim 1 is patentable over the applied reference, dependent Claims 4 and 6-10 are presently maintained in dependent form.

The outstanding Official Action asserts that Jorgensen teaches all the elements recited in independent Claims 1 and 27. Applicants respectfully traverse this assertion.

Independent Claim 1 relates to a method of obtaining a signature (S) of a gesture (G) produced in free space, by deriving at least one time-evolving signal (14) representative of muscular activity involved in producing the gesture and determining at least one value of a parameter (Psfi) yielded by that signal. Claim 1 recites that the method comprises the steps of

> - time dividing the time-evolving signal (14) into sub-frames (SR, SF2, ...), and
> - for at least one sub-frame (SFi):

> - determining at least one said parameter value (Psfi) yielded by said time-evolving signal (14) over at least a part of that sub-frame (SFi), and
>
> - expressing said parameter value as a component of a vector (S) along a dimension thereof specifically allocated to that sub-frame (SFi),
>
> the resultant vector forming the signature (S) of said gesture (G).

Independent Claim 27, while directed to an alternative embodiment, recites substantially similar features as those recited in independent Claim 1. Accordingly, the arguments presented below are applicable to each of independent Claims 1 and 27.

As discussed at p. 2, lines 22-28 of the specification, the present invention allows for fast and accurate gesture recognition, which can be used for less pronounced gestures, such as hand movements. Specifically, breaking an EMG signal into various time-divided sub-frames (see Fig. 2) and determining a parameter related to each of these sub-frames, allows a gesture to be detected in a short period of time (e.g., over only four sub-frames, as described at Fig. 5, and the corresponding text).

Turning to the applied reference, Jorgensen describes a method and system for recognizing and characterizing ENG signals associated with a gesture of a person, and using the recognized gestures to enter data and/or commands into an electrical and/or mechanical instrument.[1]

Jorgensen, however, fails to teach or suggest time dividing a detected time-evolving signal into sub-frames, determining at least parameter value yielded by the time-evolving signal over at least a part of that sub-frame, and expressing said parameter value as a component of a vector along a dimension thereof specifically allocated to that sub-frame, the resultant vector forming the signature of a gesture, as recited in independent Claims 1 and 27.

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[1] Jorgensen, Abstract.

In addressing the above noted claimed features, the outstanding Official Action relies on col. 5, lines 6-12 of Jorgensen. This cited portion of Jorgensen describes a method for obtaining a gesture signature in free space by dividing a detected EMG signal into sub-frames and determining a parameter value over that sub-frame (e.g., average magnitude OTA for instance) for each channel.

However, the vector M discussed in Jorgensen does not have the same structure as the vector S, as recited in independent Claims 1 and 27.

Specifically, independent Claim 1 recites that the signature of a gestures is defined based on a combination of time segments (e.g., combination of sub-frame components of a vector) from a single signal. Jorgensen, in contrast, defines vectors based on a combination of channels, wherein one channel corresponds to one sensor, as illustrated in fig. 6A. Since each vector is a combination of channels, Jorgensen's system requires at least two sensors ($M \geq 2$). Thus, unlike the present invention which operable using only one signal (e.g., one sensor), Jorgensen will be unusable unless a combination of at least two sensors is used.

At col. 8 lines 52-58, Jorgensen further describes that the number of dimensions of M is defined by a number of channels (also see col. 5 lines 1-2) and not by the number of time segments. Specifically, one distinct vector M is defined for each time segment I, therefore, i is simply a time index for identifying distinct vectors M. Thus, each dimension of vector M does not distinguish a different time segment but rather a different channel. The number of dimensions of M remains the same, regardless of the number of time segments.

Further, in addressing dependent Claim 2, the outstanding Official Action estimates that the number of dimensions of vector M in Joregensen increases during the evolution of the time signal. However, this is inaccurate since the values OTA for a given vector M correspond to different channels calculated for a same time segment i (see the definition of M at col. 5, and Claim 18).

Therefore, Jorgensen fails to teach or suggest time dividing a detected time-evolving signal into sub-frames, determining at least parameter value yielded by the time-evolving signal over at least a part of that sub-frame, and expressing said parameter value as a component of a vector along a dimension thereof specifically allocated to that sub-frame, the resultant vector forming the signature of a gesture, as recited in independent Claims 1 and 27.

Accordingly, Applicants respectfully request that the rejection of independent Claims 1 and 27 (and the claims that depend therefrom) under 35 U.S.C. § 102(e) and 35 U.S.C. 103(a) be withdrawn.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1-27 and 29-32, is patentably distinguishing over the applied references. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of the application is therefore requested

Respectfully submitted,

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